

United States Patent (19)

Sullivan et al.

Patent Number: 5,887,051
Date of Patent: Mar. 23, 1999**LISTENING DEVICE FOR TRACING LINE CONTINUITY AND DETECTING TELEPHONE DIAL TONE**

Inventors: Robert W. Sullivan, Simi Valley, Lee A. Wadkins, Thousand Oaks, both of Calif.

Assignee: TEST-UM, Inc., Camarillo, Calif.

Appl. No.: 900,212

Filed: Jul. 24, 1997

Int. Cl. H04M 1/24

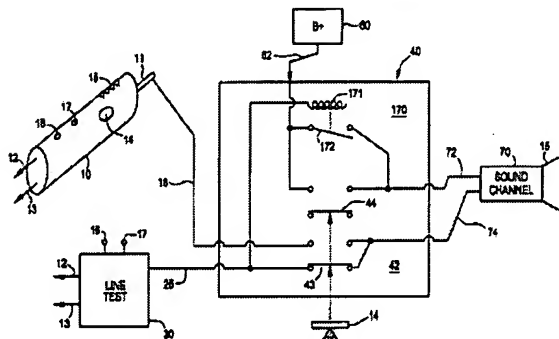
U.S. Cl. 379/21; 379/27

Field of Search 379/21-27, 30, 379/32, 22, 24, 26, 34

References Cited**U.S. PATENT DOCUMENTS**4,922,516 5/1990 Butler et al. 379/21
3,025,444 6/1991 Hilliges et al. 379/21Primary Examiner—Paul Loomis
Attorney, Agent, or Firm—Gesa W. Arant; Christopher R. Balzac**ABSTRACT**

A pocket-size hand-held testing tool is provided for testing the operation of telephone lines and tracing the location of electric wires, including a sound signal channel with an output speaker, a dial tone detection circuit for detecting a dial tone on a telephone line, a probe for capacitively receiving a signal from a particular wire in a bundled wire cable to identify that wire as one to which a tracing signal is being applied at the other end of the cable, and a momentary switch normally connecting the dial tone detection circuit into communication with the sound signal channel but manually depressible to instead selectively switch the probe into communication with the sound signal channel while disconnecting the dial tone detection circuit from it.

17 Claims, 8 Drawing Sheets



US-PAT-NO: 5887051
DOCUMENT- US 5887051 A
IDENTIFIER:
TITLE: Listening device for tracing line continuity and detecting telephone dial tone

Abstract Text - ABTX (1):

A pocket-size hand-held testing tool is provided for testing the operation of telephone lines and tracing the location of electric wires, including a sound signal channel with an output speaker, a dial tone detection circuit for detecting a dial tone on a telephone line, a probe for capacitively receiving a signal from a particular wire in a bundled wire cable to identify that wire as one to which a tracing signal is being applied at the other end of the cable, and a momentary switch normally connecting the dial tone detection circuit into communication with the sound signal channel but manually depressible to instead selectively switch the probe into communication with the sound signal channel while disconnecting the dial tone detection circuit from it.

L14: (9) ("4922516" |... | US 7127041 B1 | Tag: S | Doc: 119 | Format: PDF | ...)



(16) Patent No.: US 7,127,041 B1
(42) Date of Patent: Oct. 24, 2006

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2004UCM00858	AJ*	1-2004	Poel et al.	Journal of Interpersonal Violence	19(1)	124-136

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(4) Attorney, Agent, or Firm—J. E. McTaggart.

ABSTRACT

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ABSTRACT

or trailing mud-conductor cable runs from multiple shapers

or trailing mud-conductor cable runs from multiple shapers

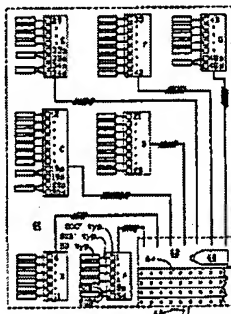
or trailing mud-conductor cable runs from multiple aboat

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or trailing mud-conductor cable runs from multiple aboat

6 Claims, 3 Drawing Sheets



ART-UNIT: 2614
PRIMARY-EXAMINER: Tran; Quoc
ATTY-AGENT-FIRM: McTaggart; J. E.

ABSTRACT:

For tracing multi-conductor cable runs from multiple phone/data locations throughout a building or complex to a junction facility where the cables need to be systematically identified and connected to a terminal panel, rapid tracing and identification are accomplished by deploying a large number of special low-cost senders, e.g. a set of forty eight senders, connecting as many senders as required to energize every cable at each location via its standard modular jack. Each sender delivers a unique identification signal, e.g. a spoken number from 1 to 48, energizing a corresponding phone cable and/or data cable. With all of the cables thusly energized simultaneously and distinguishably, a technician working with a proximity probe in the junction facility can rapidly identify and tag and/or connect all the cables in an uninterrupted session, without requiring the usual assistant and intercom link, and with no time wasted probing unenergized cables. For larger systems beyond the tracing capability of the set number of senders, a range switch provides three additional extension ranges with unique identification numbers to preserve a numerical sequence when more than one session is required. As an optional refinement, one or more of the senders may be further equipped to enable wire-mapping of all active conductors in the cables.

6 Claims, 3 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 2

U.S. Patent

Dec. 31, 1991

Sheet 3 of 4

5,077,731

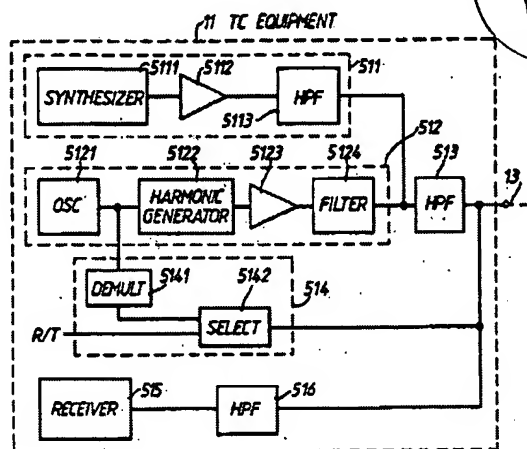
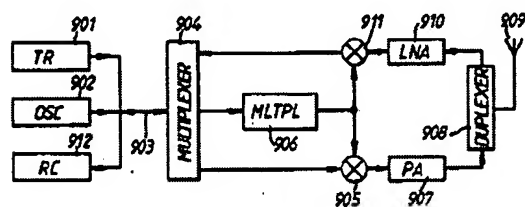


Fig.5

Fig.7
(PRIOR ART)

US-PAT-NO: 5077731
 DOCUMENT-IDENTIFIER: US 5077731 A
 TITLE: Telecommunication arrangement

Detailed Description Text - DETX (19):

FIG. 6 is a block diagram of a RF module 12 connected to TC equipment 11 shown in FIG. 5 through communication cable 13. The first and second transmitting signals from communication cable 13 are introduced in switching means 613 which is controlled by a detecting signal from tone detecting means 629.

Detailed Description Text - DETX (20):

When synthesizer 5111 in FIG. 5 generates the first transmitting signal, the tone signal from communication cable 13 is supplied to tone detecting means 629, which includes a detector 291 and a comparator 6292, through an inductor L. Detector 6291 detects level of the tone signal. Comparator 6292 compares the level with a reference level. If the level of the tone signal is greater than the reference level, comparator 6292 produces the detecting signal which controls to close switching means 613. Therefore, the first transmitting signal is supplied to a mixer 614.

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L14: (9) ["4922516"] | US 5025466 | Tag: S,P,T1 | Doc: 8/9 | "Full" 1/70 | L14: (9) ["4922516"] | US 5025466 A | Tag: S,P,T1 | Doc: 8/9 | "Full" 1/70

United States Patent
Hilliges et al.(11) Patent Number: 5,025,466
(45) Date of Patent: Jun. 18, 1991**TELEPHONE TEST INSTRUMENT**

(75) Inventors: William R. Hilliges, Lawrence D. Hilliges, both of Ashland, Oreg.; Denis Van Winkle, Santa Valley, Calif.; Myron C. Berlin, Richmond, Ohio.

(73) Assignee: Communications Manufacturing Company, Los Angeles, Calif.

(21) Appl. No.: 093,121

(22) Filed: Mar. 14, 1990

(31) Int. Cl.: H04M 1/24; H04M 1/24

(32) U.S. Cl.: H04M 1/24

(34) Field of Search: 379/21, 4, 413, 27, 379/29

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AT&T publication entitled "Crash Access Terminal" dated Jan. 1983 and labeled Exhibit 3.

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Telephone Engineer & Management article entitled

"They terminal the telco team" dated Jul. 1, 1986 and labeled Exhibit 5.

Necsy catalog page entitled "Operating Instructions" dated 2/20/1988 and labeled Exhibit 6.

Ziad Inc. publication entitled "The PHD TM Telecommunicator-More Than Just An Educated Guess" dated Jun. 1985 and labeled Exhibit 7.

Ziad Inc. publication entitled "Introducing Line Master TM", published at least one year prior to Jan. 1990 and labeled Exhibit 8.

Nicollet Technologies, Inc. entitled "Introducing the DigiSmart TM 4000-R" dated 1987 and labeled Exhibit 9.

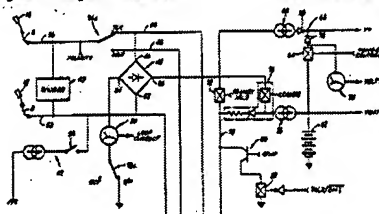
Primary Examiner-Stafford D. Schreyer

Attorney, Agent or Firm-Laney, Dougherty, Hessin & Beavers

ABSTRACT

A telephone test instrument permits voice communications with and monitoring of a telephone circuit to be tested. The instrument includes a microprocessor used in controlling various functions of the instrument. The microprocessor and other circuits of the instrument are energized from a connected telephone circuit and/or an internal energy supply which is automatically recharged from the telephone circuit. The microprocessor continually checks the voltage of the internal energy supply and automatically turns off a loudspeaker of the instrument, or prevents it from being started on, if the voltage is too low. The instrument includes a circuit which, in combination with the microprocessor, measures loop current or line voltage while the instrument is energized for making voice communications with the telephone circuit. When the loudspeaker within the instrument is energized, the earpiece receiver remains active. A belt hook connected to a housing of the instrument can connect an electrical ground through a switch in the instrument to the telephone circuit for providing a ground start. The instrument also includes a "crow-bar" circuit which effectively opens the instrument from a connected telephone circuit if too high of a loop current flows.

64 Claims, 18 Drawing Sheets



terminal ties telco team" dated Jul. 1, 1986 and labeled Exhibit 5.

Necsy catalog page entitled "Operating Instructions" dated 2/20/1988 and labeled Exhibit 6.

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Nicollet Technologies, Inc. entitled "Introducing the DigiSmart TM 4000-R" dated 1987 and labeled Exhibit 9.

ART-UNIT: 261

PRIMARY-EXAMINER: Schreyer; Stafford D.

ATTY-AGENT-FIRM: Laney, Dougherty, Hessin & Beavers

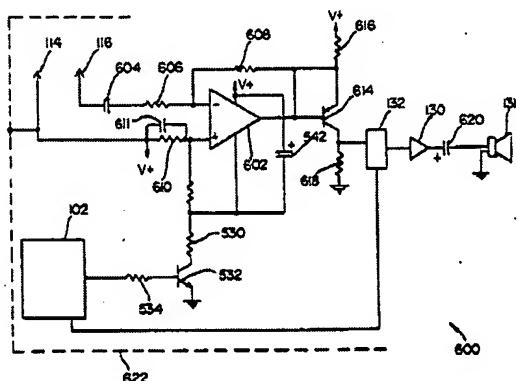
ABSTRACT:

A telephone test instrument permits voice communications with and monitoring of a telephone circuit to be tested. The instrument includes a microprocessor used in controlling various functions of the instrument. The microprocessor and other circuits of the instrument are energized from a connected telephone circuit and/or an internal energy supply which is automatically recharged from the telephone circuit. The microprocessor continually checks the voltage of the internal energy supply and automatically turns off a loudspeaker of the instrument, or prevents it from being turned on, if the voltage is too low. The instrument includes circuitry which, in combination with the microprocessor, measures loop current or line voltage while the instrument is connected for making voice communications with the telephone circuit. When the loudspeaker within the instrument is energized, the earpiece receiver remains active. A belt hook connected to a housing of the instrument can connect an electrical ground through a switch in the instrument to the telephone circuit for providing a ground start. The instrument also includes a "crow-bar" circuit which effectively opens the instrument from a connected telephone circuit if too high of a loop current flows.

Details | Text | Image | HTML | FRD

8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	US 5025466 A	19910618	70	Telephone test instrument	379/
9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	US 4922516 A	19900501	18	Telephone technician's terminals with	379/

4 Cases, 8 Drawing Sheets



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9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	US 4922516 A	19900501	18	Telephone technician's terminals with	379/

United States Patent (19)

Marshall

(11) Patent Number: **6,020,822**
(45) Date of Patent: Feb. 1, 2000

(54) CIRCUIT TESTER

(76) Inventor: Forrest A. Marshall, 515 Academy Ave., Dallas, TX 75222

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5,837,051 31,909 Sullivan et al. 379/21

(21) Appl. No.: 09/129,798

(22) Filed: Aug. 5, 1998

Primary Examiner—Julia Lien
Attorney, Agent, or Firm—Dean W. Russell; Kilpatrick
Stockton LLP

Related U.S. Application Data

Provisional application No. 60/555,119, Aug. 6, 1997.

(31) Int. Cl. G04B 31/00

(32) U.S. Cl. 340/654; 324/556; 324/133;

(33) Field of Search 340/654; 324/555;

324/556; 114, 133, 155, 157, 725, 808;

379/21; 73/865.5

(56) References Cited

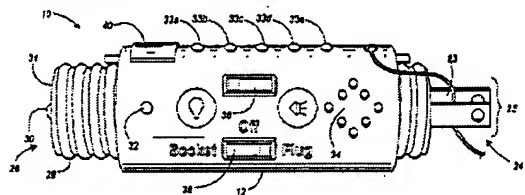
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(57) ABSTRACT

A circuit tester which allows the testing of electrical outlets, telephone circuits and light bulb sockets. The circuit tester is cylindrical with two circuit probes. The first probe is a conventional two-prong electrical plug and the second is a conventional male light bulb connector. A standard telephone jack socket is provided on the side of the cylinder.

6 Claims, 3 Drawing Sheets



TYPE IPC DATE
CIPS G01 R 19/155 20060101
CIPS G01 R 19/145 20060101

US-CL-ISSUED: 340/654 , 324/556 , 324/133 , 324/156 , 324/72.5

US-CL-CURRENT: 340/654, 324/133 , 324/156 , 324/556 , 324/72.5

FIELD-OF- 340/654; 324/555 ; 324/556 ; 324/114 ; 324/133 ;
CLASSIFICATION- 324/156 ; 324/157 ; 324/72.5 ; 324/508 ; 379/21 ;
SEARCH: 73/866.5

See application file for complete search history

REF-CITED:

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5887051	March 1999	Sullivan et al.	379/21 N/A/N/A

ART-UNIT: 276

PRIMARY-EXAMINER: Lieu; Julie

ATTY-AGENT-FIRM: Russell; Dean W. Kilpatrick Stockton LLP

ABSTRACT:

A circuit tester which allows the testing of electrical outlets, telephone circuits and light bulb sockets. The circuit tester is cylindrical with two circuit probes. The first probe is a conventional two-prong electrical plug and the second is a conventional male light bulb connector. A standard telephone jack socket is provided on the side of the cylinder.

6 Claims, 3 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 3

Details	Text	Image	HTML	PDF
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
US 4922516 A	19900501	18	Telephone technician's terminals with	379/